

Amendments to the Claims

Claims 1-37 (Cancelled).

Claim 38 (Currently amended) A physical vapor deposition target construction comprising:

a physical vapor deposition target consisting essentially of high purity aluminum material;

an ~~aluminum-containing~~ backing plate consisting of aluminum;

a diffusion bond between the target and backing plate;

wherein a predominate portion of the grains in the target material are less than 100 microns in maximum dimension; and

wherein the construction is formed utilizing a process comprising the following steps in the following order:

the target material is subjected to at least 95% compression; and

the target material is diffusion bonded to the backing plate under conditions which include a temperature of from 300°C to 340°C and a pressure of from about 10,000 psi to about 16,000 psi, with such conditions being maintained for a time of from about 15 minutes to about 1 hour.

Claim 39 (Previously presented) The physical vapor deposition target construction of claim 38 wherein all of the grains in the target material have the maximum dimension of the less than 100 microns.

Claim 40 (Previously presented) The physical vapor deposition target construction of claim 38 wherein the maximum dimension of the predominate portion of the grains in the target material is less than or equal to about 50 microns.

Claim 41 (Previously presented) The physical vapor deposition target construction of claim 38 wherein the maximum dimension of all of the grains in the target material is less than or equal to about 50 microns.

Claim 42 (Previously presented) The physical vapor deposition target construction of claim 38 wherein the maximum dimension of the predominate portion of the grains in the target material is from about 30 microns to less than 100 microns.

Claim 43 (Previously presented) The physical vapor deposition target construction of claim 38 wherein the maximum dimension of all of the grains in the target material is from about 30 microns to less than 100 microns.

Claim 44 (Previously presented) The physical vapor deposition target construction of claim 38 wherein the diffusion bond between the target and the backing plate has a bond strength of at least about 5000 psi.

Claim 45 (Previously presented) The physical vapor deposition target construction of claim 44 wherein all of the grains in the target material have the maximum dimension of the less than 100 microns.

Claim 46 (Previously presented) The physical vapor deposition target construction of claim 44 wherein the maximum dimension of the predominate portion of the grains in the target material is less than or equal to about 50 microns.

Claim 47 (Previously presented) The physical vapor deposition target construction of claim 44 wherein the maximum dimension of all of the grains in the target material is less than or equal to about 50 microns.

Claim 48 (Previously presented) The physical vapor deposition target construction of claim 44 wherein the maximum dimension of the predominate portion of the grains in the target material is from about 30 microns to less than 100 microns.

Claim 49 (Previously presented) The physical vapor deposition target construction of claim 44 wherein the maximum dimension of all of the grains in the target material is from about 30 microns to less than 100 microns.

Claim 50 (Previously presented) The physical vapor deposition target construction of claim 38 wherein the diffusion bond between the target and the backing plate has a bond strength of from about 8000 psi to about 10,000 psi.

Claims 51- 52 (Cancelled)

Claim 53 (New) A Physical vapor deposition target assembly comprising:
a target comprising an aluminum material, having a sputtering surface and an opposing back surface;
an aluminum-comprising backing plate having a continuous spiral channel disposed within a target-interface surface; and
a diffusion bond between the back surface of the target and the target-interfacing surface of the backing plate, aluminum material from the target being disposed within the continuous spiral groove of the backing plate.

Claim 54 (New) The physical vapor deposition target assembly of claim 53 wherein the backing plate comprises a material selected from the group consisting of 2000 Series aluminum, 5000 Series aluminum, 6000 Series aluminum, and 7000 Series aluminum.

Claim 55 (New) The physical vapor deposition target assembly of claim 53 wherein the backing plate comprises 6061 aluminum alloy.

Claim 56 (New) The physical vapor deposition target assembly of claim 53 wherein the target consists essentially of aluminum.

Claim 57 (New) The physical vapor deposition target assembly of claim 53 wherein the maximum dimension of all of the grains in the aluminum material of the target is from about 30 microns to less than 100 microns.

Claim 58 (New) A Physical vapor deposition target assembly comprising:
an aluminum-comprising target having a sputtering surface and an opposing back surface, a continuous spiral channel disposed within the back surface;
an backing plate comprising an aluminum material and having a target-interface surface; and
a diffusion bond between the back surface of the target and the target-interfacing surface of the backing plate, aluminum material from the backing plate being disposed within the continuous spiral groove of the target.

Claim 59 (New) The physical vapor deposition target assembly of claim 58 wherein the maximum dimension of all of the grains in the target is from about 30 microns to less than 100 microns.